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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,393	04/03/2001	Bruno Florin	88265-4014	5455

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EXAMINER

AFREMOVA, VERA

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/826,393**

Applicant(s)  
**Florin et al.**

Examiner  
**Vera Afremova**

Art Unit  
**1651**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 25, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-33 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other:  |

Art Unit: 1651

## **DETAILED ACTION**

### ***Status of claims***

Claims 14-33 as amended [Paper No. 9 filed 11/25/2002] are pending and under examination in the instant office action.

Claims 1-13 were canceled by applicants [Paper No. 6 filed 6/04/2002]

### ***Response to Arguments***

Applicants' arguments filed 11/25/2002 have been fully considered but they are not found persuasive for the reasons below.

### ***Claim Rejections - 35 USC § 112***

#### ***Indefinite***

Claims 14-33 as amended remain rejected under 35 U.S.C. 112, *second paragraph*, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 as amended remains indefinite because it is uncertain as claimed what plant material is subjected to cryo-preservation or to cryo-freezing. Is it "primary explant" or "a primary regenerating tissue"? Are "primary explant" and "a primary regenerating tissue" the same or different plant materials? It appears that primary explant comprises "primary regenerating tissues" as claimed. But it is uncertain what else would be present in the "primary explant" besides "primary regenerating tissue". Thus, it becomes uncertain whether some difference is intended between "cryo-preservation" and "cryo-freezing". What exactly is

Art Unit: 1651

subjected to “cryo-preservation” and to “cryo-freezing”, if “primary explant” and “a primary regenerating tissue” are not the same.

Applicants argue that “primary regenerating tissue” is generated after induction while “primary explant” is not (response page 3, par. 3). But it is uncertain when in the method of claim 14 the step of subjecting to an induction medium takes place? Is it before or after cryofreezing step? In the light of applicants’ argument about the nature of “primary explant” and “primary regenerating tissue” it becomes uncertain whether the claim 15 medium is intended as an induction medium for two-step making of “a regenerating tissue” or whether it is a cryofreezing medium or whether it is a thawing medium in the method for “cryo-preservation of a primary explant”.

Although the amended claim 24 does not require “a primary regenerating tissue”, it is uncertain what is a product of incubating step which is further subjected to dehydrating and cryofreezing. It is also noted that the clean copy of the amended claim 24 contains phrase “[planting tissues]” which appears to be intended for a deletion (see marked-up copy). In the light of applicants’ argument about the nature of “primary explant” and “primary regenerating tissue” and the light of instant amendment drawn to substitution of an induction medium for a regeneration medium, it becomes uncertain whether the claim 25 medium is now intended as an induction medium for two-step inducing “a primary explant” or whether it is a cryofreezing medium or whether it is a thawing medium in the method for “cryo-preservation of a primary explant”.

Art Unit: 1651

With respect to the amended claim 31 it is also uncertain what is a product of incubating step particularly in view that the starting material is “a planting tissue” but not “a plant tissue” as in the method of claim 24. Thus, it is uncertain what might be the differences, if any, between “primary explant(s)” in the cryo-preservation methods of claims 31 and 24.

Thus, the claimed process as a whole remains indefinite because it is unclear as claimed what is a sequence of active steps and/or what is the plant material which is intended to be subjected to the process of the cryofreezing or cryo-preservation and/or what is intended to be starting, intermediate and/or final products.

Although the claims 24 and 32 are presently amended to correct the phrase “dwt” for “dry weight” of plant material, it remains uncertain whether the water contents are reduced up to 28 g or below 28 g for 100 g of plant dry weight.

*New matter*

1. Claims 24-30 and 32 as amended remain rejected under 35 U.S.C. 112, *first paragraph*, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention as explained in the prior office action and for the reasons below.

The limitation “at least 28 g/100 g dry weight” in the amended claims 24 and 32 is still considered to lack a support in the as-filed specification.

Art Unit: 1651

Applicants argue (see response page 3, par. 1) that one particular example (table 4 of example 4 at the specification page 12) discloses water content of 28 g per 100 g of dry weight of plant. However, this example does not disclose the claimed range of “at least” 28 g of water content particularly with regard to the amount below 28 g as encompassed by the dehydrating step in the method of claims 24 and 32.

2. In the light of removal of the limitation such as “a primary regenerating tissue but not a somatic embryo” from the amended claims 14, 24 and 31 the “new matter” rejection of claims 14-33 under 35 U.S.C. 112, *first paragraph*, which was applied in the prior office action, has been withdrawn in the instant office action.

However, the removal of this limitation results in the reinstatement of the art rejections under 35 U.S.C. 102(b) and/or under 35 U.S.C. 103(a) over the references by Hatanaka et al. [IDS-AP], Lecouteux et al. [IDS-AQ] and/or Abdelnour-Esquivel et al. [IDS-AO] as it was noted in the prior office action and as explained in the end of this office action with respect to the presently amended claims.

With regard to the possible re-imposition of the claim rejection over the references cited in the office action mailed 2/06/2002 applicants argue (see response filed 11/25/2002 at page 4, last paragraph) that it would be incorrect since the cited references teach somatic and zygotic embryos which are excluded from the applicants invention. Yet, the as-filed specification does not provide definitions of “primary explant”, “primary regenerating explant” or induced primary

Art Unit: 1651

explant. Thus, the applicants' arguments remain unsupported by objective evidence at least in the light of original as-filed disclosure.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 14, 16-19, 31 and 33 as amended are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,143,563 [A-7] as explained in the prior office action mailed 8/09/2002 and for the reasons below.

Claims are directed to a process for the cryopreservation of primary explant comprising steps of dehydrating, prefreezing and cryofreezing the primary explant wherein the primary explant comprises the tissue that has been subjected to an induction medium for a time sufficient to induce a primary regenerating tissues or primary explant.

The "primary explant" is interpreted as a callus culture which a regenerating tissue or an induced plant explant derived from plant material incubated in an induction medium.

The cited US 6,143,563 is relied upon as explained in the prior office action and repeated herein.

US 6,143,563 teaches a process for cryopreservation of plant explant material including or plant callus (see abstract) comprising steps of dehydrating (col. 5, lines 60-63), prefreezing (col. 6, lines 28-39) and cryofreezing (col. 6, line 28) the plant material wherein the plant

Art Unit: 1651

material comprises the tissue that has been subjected to an induction medium or to a regeneration medium for a time sufficient to induce a callus culture (example 3).

The cited patent anticipate the claimed method because it comprises identical active steps and structural elements such as steps of dehydrating, prefreezing and cryofreezing the plant explant material including callus culture which is “a primary regenerating tissue” or “primary explant”.

With regard to the cited patent applicant argue the differences between developmental stages which are included or excluded in the invention as intended (response page 4, par. 1). However, the claimed method is uncertain with regard to the nature of a “primary explant” which is subjected to cryofreezing. Moreover, the applicants’ particular disclosure is drawn to the use of callus cultures. For example: see page 13, lines 30-35 or page 16, pages 4-7 or page 18, lines 8-12, wherein calli or callus cultures are subjected to freezing protocols.

Claims 14-20, 22, 31 and 33 as amended remain rejected under 35 U.S.C. 102(b) as being anticipated by Pence et al. [U] for the reasons as explained in the prior office action mailed 8/09/2002 and for the reasons below.

Claims are directed to a process for the cryopreservation of primary explant comprising steps of dehydrating, prefreezing and cryofreezing the primary explant wherein the primary explant comprises the tissue that has been subjected to an induction medium for a time sufficient to induce a regenerating tissue or primary explant. Some claims are further drawn to the use of



Art Unit: 1651

plant material derived from *Theobroma cacao*, to the use of incubation media with increasing sucrose concentration or sucrose concentration 0.4 M and 1 M in the process for cryopreservation of plant tissues.

The cited reference is relied upon as explained in the prior office action and repeated herein.

Pence et al. [U] discloses a process for the cryopreservation of plant tissues or primary explants such as zygotic embryos derived from *Theobroma cacao* wherein the method comprises steps of preculturing plant material on media with increasing concentration of sucrose from 3% to 21% (abstract or page 145, col. 1, par. 3), dehydrating or slow freezing (abstract or page 144, col. 2, last par.) and cryo-freezing (freeze-drying) the plant material (abstract or page 145, col. 1, line 21). The cited method involves that use of medium with sucrose concentration 1.0 M sucrose (page 145, col. 1, line 4) and about 0.4 M (9% -15%, for example: page 145, col. 1, par. 3). Thus, the cited method appears to anticipate the claimed method because both methods are comprising identical active steps of preculturing, pre-freezing and cryo-freezing the identical plant material such as zygotic embryos derived from *Theobroma cacao*. Both method encompass the use of substantially similar, if not identical concentration of sucrose in the whole process, particularly in view that the cited reference clearly teaches the use of increasing sucrose concentration at least during pre-culturing step and the use of the medium with 1.0 M sucrose for some of the dehydration/pre-treating/pre-freezing steps.

Art Unit: 1651

With regard to the cited reference by Pence et al. [U] applicants argue the differences between developmental stages which are included or excluded in the invention as intended (response page 4, par. 2). However, the claimed method is uncertain with regard to the nature of a “primary explant” which is subjected to cryofreezing. The method as claimed does not exclude a “zygotic embryo” by the virtue of the phrase “plant explant comprises ... regenerating tissue” (claim 14) or the phrase “incubating a plant tissue ... to induce primary explant” (claim 31).

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 14-33 as amended remain rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,143,563 [A-7] taken with Pence et al. [U], US 5,943,821 [B-7] and US 5,922,929 [C-7] as explained in the prior office action mailed 8/09/2002 and for the reasons below.

Claims are directed to a process for the cryopreservation of a plant material comprising steps of dehydrating, prefreezing and cryofreezing the plant material wherein the plant material has been subjected to an induction medium for a time sufficient to induce a primary regenerating tissue or primary explant. Some claims are further drawn to the use of incubation media with increasing sucrose concentration or sucrose concentration 0.4 M and 1 M in the process for cryopreservation of plant material. Some claims are further drawn to the use of plant material derived from *Theobroma cacao*, *Coffee canephora*, *Coffee arabica* or *Daucus carota*. Some

Art Unit: 1651

claims are/are further drawn to dehydrating the plant material to 28 g/100 g dwt. Some claims are/are further drawn to the use of prefreezing temperature between -20°C and -40°C.

US 6,143,563 is relied upon for the disclosure of a process for the cryopreservation of a plant material such as a callus culture. The cited process includes step of treating callus culture with an osmoticum such as sucrose in order to improve viability during freezing (col. 5, lines 44-50) and the cited patent teaches that the choice of osmoticum is depending of a specific type and species of callus culture (col. 6, line 50). The cited method allows for cryopreservation of a callus culture derived from any plant species which is capable of forming callus (col. 5, lines 25-31) but it is missing particular disclosure about callus forming capability of plant species such as *Theobroma cacao*, *Coffee canephora* or *Daucus carota*.

However, the cited reference by Pence et al. [U] teaches that plant species such as *Theobroma cacao* is capable to form callus culture (tables 1 and 2, for example). The other references are relied upon to demonstrate that plant species such as *Coffee canephora* is capable to form callus culture (see example 3 of US 5,943,821 [B-7]) that plant species such as *Daucus carota* is capable to form callus culture (see example 1 of US 5,922,929 [C-7]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to practice the presently claimed method for cryopreservation of plant primary explants or callus culture because the process of plant callus culture is known in the prior art. The prior art teaches that callus of any plant species can be subjected to cryopreservation and the callus cultures derived from the presently claimed plant species

Art Unit: 1651

including *Theobroma cacao*, *Coffee canephora* or *Daucus carota* have been demonstrated in the prior art. Thus, one of skill in the art would have been motivated to subject the callus cultures obtained from the plant species of *Theobroma cacao*, *Coffee canephora* or *Daucus carota* to cryopreservation protocols for the benefit of storing the plant materials. The use of a particular osmoticum concentration as well as the desiccation of plant material to a specific water content prior to cryopreservation is considered to be within the purview of the an ordinary skill practitioner. Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

With regard to the claim rejection under 35 USC § 103 over US 6,143,563 [A-7] taken with Pence et al. [U], US 5,943,821 [B-7] and US 5,922,929 [C-7] applicants' arguments are directed to the differences between the "primary explant" which is obtained in an induction medium as intended in the instant application and the callus culture of the cited references (response page 4, par. 4). However, the as-filed specification does not provide definitions to the nature of "primary explant" including the primary explant induced/obtained in an induction medium as intended. The exemplified disclosure teaches cryofreezing of calli or callus cultures. The cited references teach cryofreezing of calli or callus cultures. Therefore, the claimed method

Art Unit: 1651

is properly given interpretation under 103 section within the meaning of the subject matter as claimed and as disclosed by applicants.

No claims are allowed.

The following is reinstatement of the claim rejections as explained in the office action mailed 2/06/2002 as now applied to the presently amended claims.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 14-16, 20, 21 24, 25, 27, 28, 31 and 32 as amended are rejected under 35 U.S.C. 102(b) as being anticipated by Hatanaka et al. [IDS-AP] as explained in the office action mailed 2/06/20002 with respect to the original claims and for the reasons below.

Claims are directed to a process for the cryopreservation of primary explants comprising preculturing, dehydrating and freezing the primary explants. Some claims are further drawn to the use of plant explants derived from *Coffea canephora*, to the use of incubation media with increasing sucrose concentration or sucrose concentration 0.4 M and 1 M in the process for cryopreservation of plant tissues. Some claims are/are further directed to dehydrating plant explant material before cryofreezing to a water content of at least 28 g per 100 g material and less than 28 g.

Art Unit: 1651

Hatanaka et al. [IDS-AP] discloses a process for the cryopreservation of primary explants such as somatic embryos derived from *Coffea canephora* wherein the method comprises step of preculturing plant material on media with increasing concentration of sucrose, step of dehydrating (drying) in medium comprising sucrose and step of cryo-freezing the plant material (abstract). The cited method involves that use of medium with sucrose concentration 1.0 M sucrose (page 48, last paragraph) and about 0.4 M (0.3 M and 5.0 M). The cited method comprises step of dehydrating plant explant material before cryofreezing to a water content of 13% which is at least 28 g per 100 g material and less than 28 g as encompassed by the presently claimed invention.

Thus, the cited method anticipates the presently claimed method because both methods are comprising the identical active steps of preculturing, dehydrating and freezing the identical plant material such as somatic embryos derived from *Coffea canephora*. Both methods encompass the use of substantially similar, if not identical concentration of sucrose, particularly in view that the cited reference clearly teaches the use of increasing sucrose concentration as required by the claimed invention (claim 12, for example) and the use of the medium with 1.0 M sucrose for at least some of the dehydration/pre-treating/pre-freezing steps.

Claims 14, 15, 18, 19, 20, 23, 31 and 33 as amended are rejected under 35 U.S.C. 102(b) as being anticipated by Lecouteux et al. [IDS-AQ] as explained in the office action mailed 2/06/2002 with respect to the original claims and for the reasons below.

Art Unit: 1651

Claims are directed to a process for the cryopreservation of plant primary explant comprising preculturing, dehydrating or pre-freezing and cryo-freezing the primary explants. Some claims are further drawn to the use of plant material derived from *Daucus carota* (carrots) and to the use of incubation media with increasing sucrose concentration in the process for cryopreservation of plant tissues. Some claims are further drawn to pre-freezing temperature - 20°C to - 40°C.

Lecouteux et al. [IDS-AQ] disclose a process for the cryopreservation of primary explants such as somatic embryos derived from *Daucus carota* (carrots) wherein the method comprises step of preculturing the plant tissue in media with increasing concentration of sucrose including the use of medium with 0.4 M sucrose concentration and step of two stage freezing down to cryo-temperature by using the pretreatment medium with various/increasing concentration of sucrose (see abstract or page 320 at last paragraph or figure 1, for example). The cited references also teaches step of pre-freezing plant material at temperature of -20°C (abstract).

Thus, the cited method anticipates the claimed method because both methods are comprising identical active steps of preculturing, dehydrating and freezing the identical plant material such as somatic embryos derived from *Daucus carota*. Both methods encompass the use of substantially similar, if not identical concentration of sucrose, particularly in view that the cited reference clearly teaches the use of increasing sucrose concentration during pre-culturing/pre-treating step and the use medium with 0.4 M sucrose as the sole cryoprotectant.

Art Unit: 1651

Claims 14, 16, 20, 21, 23 and 31 as amended are rejected under 35 U.S.C. 102(b) as being anticipated by Tessereau et al. [IDS-AR] as explained in the office action mailed 2/06/2002 and for the reasons below.

Claims are directed to a process for the cryopreservation of plant tissues or primary explants comprising preculturing, dehydrating and freezing the plant tissues or primary explants. Some claims are further drawn to the use of plant material derived from *Coffee canephora* or *Daucus carota*.

Tessereau et al. [IDS-AR] disclose a process for the cryopreservation of somatic embryos derived from *Coffee canephora* or *Daucus carota* wherein the method comprises steps of preculturing, dehydrating and freezing the plant material tissues involving the use of media with increasing sucrose concentration including medium with 0.4 M sucrose concentration (abstract or page 549, col. 2, line 3).

Thus, the cited method appears to anticipate the claimed method because both methods are comprising identical active steps of preculturing, pre-freezing and cryo-freezing the identical plant material and the use of substantially similar, if not identical concentration of sucrose.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 14-33 as amended are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatanaka et al. [IDS-AP] taken with Tessereau et al. [IDS-AR], Pence et al. [U], Lecouteux et



Art Unit: 1651

al. [IDS-AQ] and Abdelnour-Esquivel et al. [IDS-AO] as explained in the office action mailed 2/06/2002 with respect to the original claims and for the reasons below.

Claims are directed to a process for the cryopreservation of plant primary explants comprising preculturing, dehydrating and freezing the plant tissues or primary explants. Some claims are further drawn to the use of plant material derived from *Theobroma cacao*, *Coffee canephora*, *Coffee arabica* or *Daucus carota* and/or to the use of incubation media with increasing sucrose concentration or sucrose concentration 0.4 M and 1 M in the process for cryopreservation of plant tissues. Some claims are/are further directed to dehydrating plant primary explant material before cryofreezing to a water content of at least 28 g per 100 g material and less than 28 g. Some claims are further drawn to pre-freezing temperature -20°C to -40°C.

The cited references by Hatanaka et al. [IDS-AP], Tessereau et al. [IDS-AR], Pence et al. [U] and Lecouteux et al. [IDS-AQ] are relied upon for the disclosure of processes for the cryopreservation of primary explants derived from various plants by preculturing, dehydrating and freezing the plant material in media with various and/or increasing sucrose concentration including concentration 0.4 M and 1 M. The cited references teach the similar cryopreservation techniques as suitable for various plants. The cited references are lacking the particular disclosure related to cryopreservation of plant material derived from *Coffee arabica*.

The reference by Abdelnour-Esquivel et al. [IDS-AO] is relied upon for the disclosure of cryopreservation of plant material derived from *Coffee arabica*. The cited reference also teaches successful cryopreservation of primary explants derived from other plants including *Coffee*

Art Unit: 1651

*canephora*. The reference by Abdelnour-Esquivel et al also teaches step of dehydrating plant primary explant material before cryofreezing to a water content of 28.9% or to 15.8% which are either more or less than 28 g per 100 g plant material as encompassed by the presently amended claims.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to apply the presently claimed protocol of pre-culturing, dehydrating and freezing plant tissues derived from various plant species with a reasonable expectation of success in cryopreservation of plant tissues derived from various plant species because the similar protocols and cryoprotective media have been demonstrated as suitable for storage and/cryopreservation of tissues of various plant species including that which are presently claimed. Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1651

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (703) 308-9351. The examiner can normally be reached on Monday to Friday from 9:00 to 5:30.

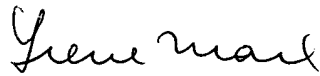
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The fax phone number for this Group is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Vera Afremova

Art Unit 1651

February 13, 2003.

  
**IRENE MARX**  
**PRIMARY EXAMINER**